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(10) CANADIAN PATENT

(54) PRESERVATION OF WOOD

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South Africa

No. OF CLAIMS 10 - No drawing

THIS INVENTION relates to improvements in protecting wooden poles, posts and other like timber members against the ravages of wood destructive organisms such as weathering, decay, insect and/or termite attack and/or the like. More particularly the invention relates to the chemical treatment of timber members used in contact with the ground or exposed to the elements of nature whereby a prolongation of the service life of such members may be attained.

It is common practice to impregnate such timber members with chemical substances having wood preserving, limited moisture movement retardation, insect repelling and such like characteristics. The impregnation of the timber is at least

in respect of the portions in or required to be in contact with the ground and also the portions extending above said portions in contact with the ground. Ideal impregnating chemical substances are required to be capable of penetrating deeply into the timber and should be weather resistant and moisture repellant to forestall leaching or migration of the toxic elements of the preservative to the surface of the timber.

The chemical impregnation of wood with water borne or water solvent timber preservatives or preservatives in other volatile solvents has little influence in forestalling weathering. Oily preservatives, such as creosote, creosote mixtures containing mineral oil compatible with creosote and fortified or unfortified with pentachlorophenol, copper naphthenate or extended with coal tar and the like, have a more pronounced effect which is greatest with a mixture which tends to keep the wood oily or covered with a crust of tarry residue. The application of water repellants are beneficial to the extent that they forestall or retard dimensional or other changes.

Over many years creosote has been used as a wood preservative and is still considered most satisfactory, notwithstanding certain disadvantages. The creosote may be in the form of high temperature wood preserving creosote, low and medium temperature wood preserving creosote, and various types of wood preservatives with a creosote basis for the impregnation and consequent prolonging the service life of wood poles,

posts or other timber members thus impregnated and used in contact with the ground and/or exposed to the elements of nature.

According to the invention a method for chemically impregnating wood is provided which includes the application to the wood of a polymeric, acrylic, or metha-acrylic compound in solution which, on evaporation of the solvent, is capable of being retained in the wood.

The application of the compound in solution to the wood is after or together with a wood preserving creosote or a wood preservative having a creosote basis.

The dissolved polymeric, acrylic, or metha-acrylic compound and the solvent is compatible with creosote, creosote solutions or wood preservatives with a creosote basis to form a readily liquidised emulsion and which is difuseable with high, low and medium temperature wood preserving creosote, and wood preservatives with a creosote basis without precipitation or the formation of a sludge. Furthermore an admixture of the dissolved compound as a readily liquidised emulsion with creosote or creosote solutions or wood preservatives with a creosote basis will not encapsulate, mask, neutralise or inactivate the active ingredients while the overall performance of the preservatives is not reduced.

Generally wood preservatives with a creosote basis, containing a mineral oil, are suitable to form the emulsion. Certain wood preservatives, and particularly those containing

wax, are unsuitable to form the desired emulsion. It was found that dissolved polymeric, acrylic or metha-acrylic compounds are not compatible with wax. Reference to wood preservatives in this specification refer only to those which are compatible with the dissolved compound.

If desired a 10% admixture of pentachlorophenol crystals or 10% copper nahthenate may be dissolved in the aforesaid admixture for an increased toxicity of the ultimate mixture.

The invention extends to an admixture comprising the dissolved compound with creosote and/or wood preservatives with a creosote basis capable of being applied by any one of the recognised processes used for the application to wood of any type of creosote or wood preservative with a creosote basis.

The admixture application may be in combination with bitumen or tar compounds.

The admixture may be applied to wooden poles, posts or structure members which are already in service to prolong the service life of the timber or to timber members still to be used.

For treatment of timber members which are in service the surface section of the timber member, softened, weathered or disentegrated must be exposed and allowed to dry out sufficiently whereafter solutions in organic solvents of copper naphthenate, pentachlorophenol, pentachlorophenol-zinc naphthenate, tetrachloronaphthalene-pentachlorophenol, or tributyl tin

oxide is applied by injection or lavish brushing or spray coating to arrest any cause for weathering as well as any decay present and also to forestall any further infestation. Such infested timber fully penetrated by the said solutions also act as a reservoir for the preservative subsequently applied. After the solvents of the said solutions have evaporated a lavish coating of the admixture according to the invention is applied. Subsequently a covering or coating of bitumen or any suitable type of tar, preferably fortified with 10% pentachlorophenol crystals or 10% copper naphthenate is applied to form a protective coating for the admixture. Such coating, when fortified, is also toxic to destructive organisms and is also adapted to act as a further moisture repellant.

If desired the last mentioned coating may be covered to a desired thickness (by way of example ½" thickness) with a cementitious mixture which may be reinforced if required, or with an asbestos cement encasement to cover the treated area. In the event of an asbestos encasement being used the cavity between the wooden pole, posts or like member and the asbestos encasement is filled with hot bitumen or tar, preferably fortified as described, to ensure the adherence of the encasement to the treated member on cooling. Thereafter the hole excavated around the member, to expose the effected portion of the member, is backfilled and stamped firmly.

Preinstallation impregnation of wooden members with the admixture according to the invention, in combination with high temperature wood preserving creosote, low and medium temperature wood preserving creosote and certain types of wood preservatives with a creosote basis, can be effected for consequent prolongation of the service life of the impregnated wooden poles and the like when used in contact with the ground and/or exposed to the elements of nature. The impregnation may be effected by known pressure impregnation processes, or by known hot-cold open tank (thermal treatment) processes.

All the toxic ingredients in the aforesaid solutions are insoluable in water and leaching out and migration is forestalled so that the solution or the admixture, impregnated in the wood, is retained in the wood.

The polymeric substance is preferably an acrylic.

It was found that a very suitable polymeric substance is polymethyl methacrylate dissolved in acetone or any other suitable solvent as well as methyl methacrylate monomer. The dissolved acrylic can be applied to the timber members previously treated with a wood preserving creosote, wood preservatives with a creosote basis, or may be mixed with creosote, a creosote solution or the like to form a liquidised emulsion.

The solution of the polymethyl methacrylate in acetone or other suitable solvent or/methyl methacrylate monomer in admixture with high temperature wood preserving creosote, low and medium

temperature wood preserving creosote, or certain types of wood preservatives with a creosote basis in concentrations of up to 20%, calculated on the total volume of the mixture (10% was found to give excellent results) presented the following advantages over the established properties of creosote or wood preservatives with a creosote basis:- an improved effect in respect of the viscosity and surface tension of the preservative without the formation of a sludge or precipitation while the mixture remains fluid at a temperature as low as 3°C and probably lower; the presentation of a barrier in the outer zone of the wood which is moisture repellant, the moisture repellancy of the mixture exceeding the established moisture repellancy of known creosotes and wood preservatives with a creosote basis of up to about 80% and more (depending on the period allowed in stabilising the mixture and in forming a barrier prior to being taken into service); a forestalment of disintegration of the cell structure of the timber caused by the accumulation of salt or other solids on the absorbation of salt laden moisture from the sea or chemically laden moisture from any other source, in addition to disintegration of cell structure caused by weathering; the formulation of a barrier presenting a stabilising effect to the preservatives, the hardness of the outer zone being increased by approximately 15% after one month of the treatment of the timber so that the strength properties of the timber can be ex-

pected to be increased; and no encapsulating, masking, neutralising or inactivating of the active ingredients of the preservative while, if fortified with pentachlorophenol, a required weight of preservative per cubic foot of wood may be substantially reduced as compared with the present practice. The said compound on evaporation of the solvent, forestalls weathering, leaching, bleeding and migration of the preservatives to the outer zone of the timber which are the causes for a rapid loss of the active ingredients from the wood surface by oxidation, evaporation, or by being washed out. A surface almost clean to the touch is presented on the timber members after the impregnation treatment with the dissolved compound, or as an admixture with any creosote timber preservative or certain wood preservatives with a creosote basis and the dissolved compound according to the invention, by a recognised pressure or open-tank (thermal) process, and after cooling to ambient temperatures.

It was found that seven days after treatment of wood with the polymeric, acrylic or methacrylate compound in a suitable solvent, or as an admixture to creosote or wood preservatives with a creosote basis, the wood can successfully be painted with an acrylic base paint.

The high temperature creosote referred to above is obtained by the distillation of coal at a high temperature whereas the low and medium temperature creosotes are obtained by distillation of coal respectively at low and medium temperatures. The wood preservatives with a creosote basis may comprise:- high temperature creosote and high temperature tar, low and medium temperature creosote and low and medium temperature creosotes extended with a mineral oil, or a combination of high temperature creosotes and low and medium temperature creosotes.

THE EMBODIMENTS of the invention in which exclusive property or privelege is claimed are defined as follows:

1. A method of treating wood pretreated with wood preservatives containing creosote, which method includes the steps of applying to the pretreated wood a liquid having monomeric or polymeric methylmethacrylate as an ingredient, and of permitting the liquid to penetrate the wood.

2. A method of treating wood which includes the steps of applying a liquid to the wood, the liquid having creosote and monomeric or polymeric methylmethacrylate as ingredients, and of permitting the liquid to penetrate the wood.

3. A method of treating wood as claimed in Claim 1 or Claim 2, wherein the liquid furthermore includes pentachlorophenol or copper naphthenate as an ingredient.

4. A method of treating wood as claimed in Claim 1 or Claim 2, wherein the liquid is applied by a pressure process.

5. A method of treating wood as claimed in Claim 1 or Claim 2, wherein the liquid is applied by an open-tank (thermal) process.

6. A method of treating wood as claimed in Claim 1 or Claim 2 which includes the step of finally coating the wood with a bituminous or tar substance.

7. A method of treating wood as claimed in Claim 1 or Claim 2 which includes the step of finally coating the wood with a bituminous or tar substance which contains pentachlorophenol or copper naphthenate.

8. A liquid for treating wood and which has creosote; and monomeric methylmethacrylate, or polymeric methylmethacrylate and a solvent, as ingredients.

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9. A liquid as claimed in Claim 8, which includes also pentachlorophenol or coppernaphthenate as an ingredient.

10. A solution as claimed in Claim 8 or Claim 9, in which the solvent is acetone.

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Canadian Patents Database

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(54) PRESERVATION OF WOOD

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ABSTRACT:

CLAIMS: Show all claims

*** Note: Data on abstracts and claims is shown in the official language in which it was submitted.

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THIS INVENTION relates to improvements in protecting wooden poles, posts and other like timber members against the ravages of wood destructive organisms such as weathering, decay, insect and/or termite attack and/or the like. More particularly the invention relates to the chemical treatment of timber members used in contact with the ground or exposed to the elements of nature whereby a prolongation of the service life of such members may be attained.

It is common practice to impregnate such timber members with chemical substances having wood preserving, limited moisture movement retardation, insect repelling and such like characteristics. The impregnation of the timber is at least

in respect of the portions in or required to be in contact with the ground and also the portions extending above said portions in contact with the ground. Ideal impregnating chemical substances are required to be capable of penetrating deeply into the timber and should be weather resistant and moisture repellant to forestall leaching or migration of the toxic elements of the preservative to the surface of the timber.

The chemical impregnation of wood with water borne or water solvent timber preservatives or preservatives in other volatile solvents has little influence in forestalling weathering. Oily preservatives, such as creosote, creosote mixtures containing mineral oil compatible with creosote and fortified or unfortified with pentachlorophenol, copper naphthenate or extended with coal tar and the like, have a more pronounced effect which is greatest with a mixture which tends to keep the wood oily or covered with a crust of tarry residue. The application of water repellants are beneficial to the extent that they forestall or retard dimensional or other changes.

Over many years creosote has been used as a wood preservative and is still considered most satisfactory, notwithstanding certain disadvantages. The creosote may be in the form of high temperature wood preserving creosote, low and medium temperature wood preserving creosote, and various types of wood preservatives with a creosote basis for the impregnation and consequent prolonging the service life of wood poles,

posts or other timber members thus impregnated and used in contact with the ground and/or exposed to the elements of nature.

According to the invention a method for chemically impregnating wood is provided which includes the application to the wood of a polymeric, acrylic, or metha-acrylic compound in solution which, on evaporation of the solvent, is capable of being retained in the wood.

The application of the compound in solution to the wood is after or together with a wood preserving creosote or a wood preservative having a creosote basis.

The dissolved polymeric, acrylic, or metha-acrylic compound and the solvent is compatible with creosote, creosote solutions or wood preservatives with a creosote basis to form a readily liquidised emulsion and which is difuseable with high, low and medium temperature wood preserving creosote, and wood preservatives with a creosote basis without precipitation or the formation of a sludge. Furthermore an admixture of the dissolved compound as a readily liquidised emulsion with creosote or creosote solutions or wood preservatives with a creosote basis will not encapsulate, mask, neutralise or inactivate the active ingredients while the overall performance of the preservatives is not reduced.

Generally wood preservatives with a creosote basis, containing a mineral oil, are suitable to form the emulsion. Certain wood preservatives, and particularly those containing

wax, are unsuitable to form the desired emulsion. It was found that dissolved polymeric, acrylic or metha-acrylic compounds are not compatible with wax. Reference to wood preservatives in this specification refer only to those which are compatible with the dissolved compound.

If desired a 10% admixture of pentachlorophenol crystals or 10% copper nahthenate may be dissolved in the aforesaid admixture for an increased toxicity of the ultimate mixture.

The invention extends to an admixture comprising the dissolved compound with creosote and/or wood preservatives with a creosote basis capable of being applied by any one of the recognised processes used for the application to wood of any type of creosote or wood preservative with a creosote basis.

The admixture application may be in combination with bitumen or tar compounds.

The admixture may be applied to wooden poles, posts or structure members which are already in service to prolong the service life of the timber or to timber members still to be used.

For treatment of timber members which are in service the surface section of the timber member, softened, weathered or disentegrated must be exposed and allowed to dry out sufficiently whereafter solutions in organic solvents of copper naphthenate, pentachlorophenol, pentachlorophenol-zinc naphthenate, tetrachloronaphthalene-pentachlorophenol, or tributyl tin

oxide is applied by injection or lavish brushing or spray coating to arrest any cause for weathering as well as any decay present and also to forestall any further infestation. Such infested timber fully penetrated by the said solutions also act as a reservoir for the preservative subsequently applied. After the solvents of the said solutions have evaporated a lavish coating of the admixture according to the invention is applied. Subsequently a covering or coating of bitumen or any suitable type of tar, preferably fortified with 10% pentachlorophenol crystals or 10% copper naphthenate is applied to form a protective coating for the admixture. Such coating, when fortified, is also toxic to destructive organisms and is also adapted to act as a further moisture repellant.

If desired the last mentioned coating may be covered to a desired thickness (by way of example ½" thickness) with a cementitious mixture which may be reinforced if required, or with an asbestos cement encasement to cover the treated area. In the event of an asbestos encasement being used the cavity between the wooden pole, posts or like member and the asbestos encasement is filled with hot bitumen or tar, preferably fortified as described, to ensure the adherence of the encasement to the treated member on cooling. Thereafter the hole excavated around the member, to expose the effected portion of the member, is backfilled and stamped firmly.

Preinstallation impregnation of wooden members with the admixture according to the invention, in combination with high temperature wood preserving creosote. low and medium temperature wood preserving creosote and certain types of wood preservatives with a creosote basis, can be effected for consequent prolongation of the service life of the impregnated wooden poles and the like when used in contact with the ground and/or exposed to the elements of nature. The impregnation may be effected by known pressure impregnation processes, or by known hot-cold open tank (thermal treatment) processes.

All the toxic ingredients in the aforesaid solutions are insoluable in water and leaching out and migration is forestalled so that the solution or the admixture, impregnated in the wood, is retained in the wood.

The polymeric substance is preferably an acrylic.

It was found that a very suitable polymeric substance is polymethyl methacrylate dissolved in acetone or any other suitable solvent as well as methyl methacrylate monomer. The dissolved acrylic can be applied to the timber members previously treated with a wood preserving creosote, wood preservatives with a creosote basis, or may be mixed with creosote, a creosote solution or the like to form a liquidised emulsion.

The solution of the polymethyl methacrylate in acetone or other suitable solvent or methyl methacrylate monomer in admixture with high temperature wood preserving creosote, low and medium

temperature wood preserving creosote, or certain types of wood preservatives with a creosote basis in concentrations of up to 20%, calculated on the total volume of the mixture (10% was found to give excellent results) presented the following advantages over the established properties of creosote or wood preservatives with a creosote basis:- an improved effect in respect of the viscosity and surface tension of the preservative without the formation of a sludge or precipitation while the mixture remains fluid at a temperature as low as 3°C and probably lower; the presentation of a barrier in the outer zone of the wood which is moisture repellant, the moisture repellancy of the mixture exceeding the established moisture repellancy of known creosotes and wood preservatives with a creosote basis of up to about 80% and more (depending on the period allowed in stabilising the mixture and in forming a barrier prior to being taken into service); a forestalment of disintegration of the cell structure of the timber caused by the accumulation of salt or other solids on the absorbation of salt laden moisture from the sea or chemically laden moisture from any other source, in addition to disintegration of cell structure caused by weathering; the formulation of a barrier presenting a stabilising effect to the preservatives, the hardness of the outer zone being increased by approximately 15% after one month of the treatment of the timber so that the strength properties of the timber can be ex-

neutralising or inactivating of the active ingredients of the preservative while, if fortified with pentachlorophenol, a required weight of preservative per cubic foot of wood may be substantially reduced as compared with the present practice. The said compound on evaporation of the solvent, forestalls weathering, leaching, bleeding and migration of the preservatives to the outer zone of the timber which are the causes for a rapid loss of the active ingredients from the wood surface by oxidation, evaporation, or by being washed out. A surface almost clean to the touch is presented on the timber members after the impregnation treatment with the dissolved compound, or as an admixture with any creosote timber preservative or certain wood preservatives with a creosote basis and the dissolved compound according to the invention, by a recognised pressure or open-tank (thermal) process, and after cooling to ambient temperatures.

It was found that seven days after treatment of wood with the polymeric, acrylic or methacrylate compound in a suitable solvent, or as an admixture to creosote or wood preservatives with a creosote basis, the wood can successfully be painted with an acrylic base paint.

The high temperature creosote referred to above is obtained by the distillation of coal at a high temperature whereas the low and medium temperature creosotes are obtained by distillation of coal respectively at low and medium temperatures. The wood preservatives with a creosote basis may comprise:- high temperature creosote and high temperature tar, low and medium temperature creosote and low and medium temperature creosotes extended with a mineral oil, or a combination of high temperature creosotes and low and medium temperature creosotes.

THE EMBODIMENTS of the invention in which exclusive property or privelege is claimed are defined as follows:

1. A method of treating wood pretreated with wood preservatives containing creosote, which method includes the steps of applying to the pretreated wood a liquid having monomeric or polymeric methylmethacrylate as an ingredient, and of permitting the liquid to penetrate the wood.

2. A method of treating wood which includes the steps of applying a liquid to the wood, the liquid having creosote and monomeric or polymeric methylmethacrylate as ingredients, and of permitting the liquid to penetrate the wood.

3. A method of treating wood as claimed in Claim 1 or Claim 2, wherein the liquid furthermore includes pentachlorophenol or copper naphthenate as an ingredient.

4. A method of treating wood as claimed in Claim 1 or Claim 2, wherein the liquid is applied by a pressure process.

5. A method of treating wood as claimed in Claim 1 or Claim 2, wherein the liquid is applied by an open-tank (thermal) process.

6. A method of treating wood as claimed in Claim 1 or Claim 2 which includes the step of finally coating the wood with a bituminous or tar substance.

7. A method of treating wood as claimed in Claim 1 or Claim 2 which includes the step of finally coating the wood with a bituminous or tar substance which contains pentachlorophenol or copper naphthenate.

8. A liquid for treating wood and which has creosote; and monomeric methylmethacrylate, or polymeric methylmethacrylate and a solvent, as ingredients.

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9. A liquid as claimed in Claim 8, which includes also pentachlorophenol or coppernaphthenate as an ingredient.

10. A solution as claimed in Claim 8 or Claim 9, in which the solvent is acetone.

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(19) (CA) **CANADIAN PATENT** (12)

(54) Pressure Impregnation of Wood Poles for Preservation

(72) Trumble, William P.,
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(73) Granted to Bell Canada
Canada

(21) APPLICATION No. 417,630

(22) FILED 821214

No. OF CLAIMS 10 - NO DRAWING

Canada

4176 3

PRESSURE IMPREGNATION OF WOOD POLES FOR PRESERVATION

Abstract of the Disclosure

A treatment for wood poles, as used for telecommunications and electric power poles, to reduce surface hardening comprises modifying the standard treatment solution by the addition of a polymer of ethylene oxide. A surface active agent is a further possible additive, and reduction of the hexavalent chrome ion in the standard solution is a further modification.

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This invention relates to the preservation of wood poles, particularly wood poles as are used for telecommunications and electric power cables.

Telephone and other poles are conventionally treated with chrome copper arsenate type preservatives. However a problem with such preservatives is that there is a tendency for the outer portion of a pole, the sapwood, to harden. This creates problems for servicing personnel who climb the poles using climbing spurs clamped to their boots. The hard sapwood restricts entry of spurs. Also checking of the wood can occur.

The present invention relates to the modifying of the chrome copper arsenate solution to avoid, or at least reduce, hardening of the sapwood, with improved pole climbability.

From experience it has been found that, as stated above, the chrome copper arsenate treatment tends to make the surface of treated poles harder than the corresponding white stock, or untreated stock. It has been found that hard surface poles have a higher concentration of chrome ion near the surface than in other areas of the poles radial cross-section. The chrome is the apparent reason in the hardening phenomenon, as ammoniacal copper arsenate and acid copper arsenate do not appear to harden the wood as much as chrome copper arsenate does. The reason for the preservative concentration at the surface nor the cause of hardening of the wood is not fully understood.

There appears to be at least two plausible reasons for the high concentration of the preservative salts at the surface of the wood. One reason is that the outer wood, or sapwood, is more

porous than the inner wood, or heartwood. Because of its porosity, the sapwood is more capable of holding a solution than is the heartwood, and the chrome reacts with the reactive sites in the wood material matrix. Another reason considered, for the high concentration, is that the hexavalent chrome oxide is so reactive with the sugars and other materials in the sapwood that the combination forms a semi-solid product that blocks further penetration of preservation into the wood matrix.

The actual mechanism of hardening of the pole surface is even more obscure than the mechanism of concentration of chrome ion. One theory is that the chrome oxide converts some of the lignin and sugars to a water soluble compound, which is then extracted from the wood, similar to weathering. The remaining cellulose-lignin composite then shrinks resulting in a case hardening mechanism. Another theory is that chrome oxide reacts to polymerize the lignin phase of the cellulose-lignin composite to form a cellulose-chrome lignin composite that is harder than the original composite. Neither of these theories are proven, but it has been found that these two reactions can exist.

After considering the problems and finding out the feature of concentration of chrome ion near the surface of the pole, and developing the above related reasons and theories, it is still not obvious as to what should be done to alleviate the problems. It is proposed to provide a variation in the preservative solution to give a formulae which, while retaining the preservative action, will mitigate hardening. One treatment is to use a polymer of ethylene oxide, generally referred to as polyethylene glycol (PEG). A

preferred molecular weight range is from about 500 to 2,000, although down to 100 has been used, but is not fully effective. The concentration can vary from about .5 to 10% by volume. As a particular example, a standard water based solution of 2% concentration of chromium, copper and arsenic salts is modified by a 10% concentration of 1000 molecular weight polymer of ethylene glycol (PEG 1000). The polymer acts as a "moisturizer" for the wood matrix and as a buffer for the chrome oxide to retard its agressive chemical reactivity to wood sugars lignins etc. The moisturizing action of the PEG 1000 occurs in that the PEG fills the pores of the wood and then attracts and binds water to its own matrix. This is believed to impart softening to the outer surface of the wood, provide some lubricity for climbing spurs and at least reduce checking or splitting in the pole.

A further example is the addition of a surface active agent to aid penetration of the heartwood, to reduce the concentration in the sapwood. An additional effect is the possibility of allowing the excess chrome to be easily withdrawn on irrigation by fresh water.

Another example is to reduce the hexavalent chrome ion present, for example to 2/3 of that of the normal solution. This also increases penetration.

As explained, the actual mechanisms resulting in the hardening of the pole surface is not fully understood. However, by considering the various problems and effects it has been possible to propose novel treatments which are effective, even though it is not fully understood how the treatments provide the desired results.

The poles are treated with the solutions in the conventional way, that is by positioning in a chamber which is first evacuated to extract as much air as possible and then pressurizing with the treatment solution.

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THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. The method of preserving wood by treatment with a standard water based solution of chrome, copper and arsenate salts, characterized by the addition of a polymer of ethylene oxide to the solution prior to treatment of the wood.

2. The method of claim 1, characterized by the polymer of ethylene oxide having a preferred molecular weight range from about 100 to about 2,000.

3. A method as claimed in claim 2, wherein the preferred molecular weight range is from about 500 to about 2,000.

4. A method as claimed in claim 3, comprising treating the wood with a water based standard solution of about 2 to 2.5% concentration of chromium copper and arsenic salts modified by the addition of a .5% to 10% concentration of 1,000 molecular weight polymer of ethylene glycol.

5. A method as claimed in claim 1 including the addition of a surface active agent to the solution.

6. A method as claimed in claim 1, including maintaining the hexavalent chrome ion in the solution to a maximum of 2/3 of that in a standard solution.

7. The method of preserving wood by treatment with a water based standard solution of the chrome-copper-arsenate type at a solution strength of about 2% to 2.5% characterized by the addition of a .5% to 10% concentration of 1,000 molecular weight polymer of ethylene glycol.

8. The method of claim 7 including the addition of a surface active agent to the solution.

9. The method of claim 7 including maintaining the hexavalent chrome ion in the solution at a maximum of 2/3 of that in a standard solution.

10. A method as claimed in claim 1, wherein the wood is treated in a chamber by first evacuating the chamber for a predetermined period after placing the wood in the chamber, and then pressure treating the wood with the solution at a predetermined pressure for a predetermined period.